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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,262

09/06/2005

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EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT

PAPER NUMBER

2855

MAIL DATE

DELIVERY MODE

04/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/524,262	ICHIHARA ET AL.	
	Examiner	Art Unit	
	Gail Verbitsky	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 6-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 7-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 6 and 12-13 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/17806A1 [hereinafter WO] in view of Aubel et al. (U.S. 6921197) [hereinafter Aubel].

WO suggests to monitor a flat/ deflated tire and teaches to position a temperature sensor in each tire and monitor an atmospheric temperature and rate of change of temperature in each tire and compare it with a predetermined value (previously determined rate of change of temperature/ previously set limit) in order to determine flat tire. WO determines first time temperature derivative and second derivative. WO suggests reinforcing the tires. WO states that it is important for a driver, when it drives a car with a deflated tire to know if the driver could drive more and for how long rather than staying on a side road and repairing the tire.

Although, this might imply that the driver wants to know the end life of the tire as function of the temperature. WO does not explicitly state that the predetermined data is a previously obtained data stored in the memory.

Aubel discloses the device in the field of applicant's endeavor. Aubel teaches

Art Unit: 2855

to embed a temperature sensor in a tire and evaluate the tire condition with respect to runable time and integral of output temperature signal, the integral is indicative a wear signal, wherein when the integral is exceeding a threshold level, the device indicates a wear (thus, residual lifetime is judged) signal for the tire. This could indicate a flat tire, and a pressure control turns an air pump. disclose a device/ method/ process of judging in the field of applicant's endeavor comprising detection units arranged in each tire capable of measuring temperature of the tire and determining with respect to time (integrating) when the wear (residual lifetime) or the tire exceeds a threshold (statistically set temperature or the temperature set from the test stand), wherein the tire pressure control decides to inflate the tire (thus, deciding that the tire is flat which is judged based on the measured temperature). The measured temperature is a temperature inside the tire. The device also predicts the wear (time). Aubel states that the sides of the tire are more likely susceptible to wear. Also the tire damage can be detected (entire col. 5). Aubel states that the too high temperature can be indication of too low pressure (flat tire).

For claims 12-13: the device has an evaluation unit/ microprocessor/ computer comprising a storage device/ memory (col. 6, lines 20-28, col. 7, lines 35-37).

In addition, Aubel states that the temperature is also an indication that the tire has been driven for a long period of time (continuously) at a low pressure (col. 5, lines 33-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device/ method disclosed by WO so as to clearly judge the residual life of the tire with respect to the flat tire, as taught by Aubel, in order to allow the operator to know for how long he/ she can run the tire/ vehicle.

3. Claim 11 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/17806A1 [hereinafter WO] and Aubel, as applied to claims 1-2, 6 and 12-13 above, and further in view of Tanaka Masatoshi (U.S. 6701986).

WO and Abel disclose the device/ method as stated above.

They do not teach to reinforce tire with a reinforcing rubber.

Masatoshi Tanaka states that it is very well known in the art to reinforce tires with rubber layer in order to prolong their life.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the tire, disclosed by WO and Abel, with reinforcing rubber, as taught by Masatoshi Tanaka, in order to prolong the tire life and provide the operator with the tire behavior when it is reinforced, in order to predict life of already reinforced tire.

4. Claims 1-2, 6, 12-13 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/17806A1 [hereinafter WO] in view of Nowicki et al. (U.S. 5945908) [hereinafter Nowicki].

WO suggests to monitor a flat/ deflated tire and teaches to position a temperature sensor in each tire and monitor an atmospheric temperature and rate of change of temperature in each tire and compare it with a predetermined value (previously determined rate of change of temperature) in order to determine flat tire. WO determines first time temperature derivative and second derivative. WO suggests reinforcing the tires. WO states that it is important for a driver, when it drives a car with a deflated tire to know if can drive more and how long rather than staying on a side road and repairing the tire. This would imply that the driver wants to know the end life of the tire as function of the temperature.

WO does not explicitly teach the newly added limitations of claim 1, with the remaining limitations of claims 1-2, 6, 12-13.

Nowicki discloses a device/ method in the field of applicant's endeavor. Nowicki states that expected tire life (end stage) is calculated based on a tire temperature and pressure. Tire degradation/ wear information is stored in a memory in a computer. The computer has a program for calculating accumulation of degradation of the tire and calculation of the expected life/ end stage. The parameters are compared against previously stored parameters. If they exceed a limit, the operator is being notified (entire col. 8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device/ method disclosed by WO so as to clearly judge the residual life of the tire with respect to the flat tire, as taught by Nowicki, in order to allow the operator to know for how long he/ she can run the tire/ vehicle.

Allowable Subject matter

5. Claims 7-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments, filed 01/17/2008 have been fully considered and they are not persuasive.

Applicant states that Aubel does not teach that the tire runs continuously in a flat state. This argument is not persuasive because (col. 4, lines 33-34) Aubel states that the tire could run for a long time at a low pressure until the operator is notified.

Art Unit: 2855

In addition, the term continuously is considered to be a relative term since one could consider 5 minutes as a continuous period while another could consider an hour as a continuous period depending on the invention and mode of operation.

Applicant states that Aubel does not measure atmospheric temperature inside the tire. This argument is not persuasive because: A) Aubel embed the sensor in the rim or the rubber, and the temperature measured by Aubel is indicative of the rubber temperature and thus, atmospheric temperature inside the tire, B) Applicant has never described/ shows in the drawing a sensor inside the tire, in fact, the sensor of the Applicant is positioned in the rime, as in Aubel, C) WO, used as a primary reference, teaches monitoring temperature inside the tires, D) Tuttle, U.S. 7075421 teaches that the sensor positioned in the rim measures temperature inside the tire.

Applicant states that WO fails to quantitatively judging the residual life of a flat tire. This argument is not persuasive because: A) this limitation is not stated in the claims. It is the claims that define the claimed invention, and it is claims, not specification that are anticipated or unpatentable. Constant v. Advanced Micro-Devices, Inc., 7 USPQ2d 1064.

B) Aubel teaches to determine by using integration (calculation/ quantitatively determines) when the wear (residual lifetime) exceeds a threshold (does not function safely).

Applicant states that Nowicki does not teach to calculate a time predicted to reach the limit/ threshold temperature (occurrence of trouble). This argument is not persuasive because: Nowicki teaches that expected tire life/ end stage/ residual life is dependent and could be calculated based on temperature and pressure. This would imply that Nowicki could predict/ calculate the time when the trouble could occur. In addition Aubel teaches when the dangerous wear could occur, and WO, used as a primary reference,

teaches time/ temperature dependency to predict for how long the operator could drive the flat tire.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571/ 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2855

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GKV

Gail Verbitsky
Primary Patent Examiner, TC 2800

April 08, 2008

/Gail Verbitsky/
Primary Examiner, Art Unit 2855